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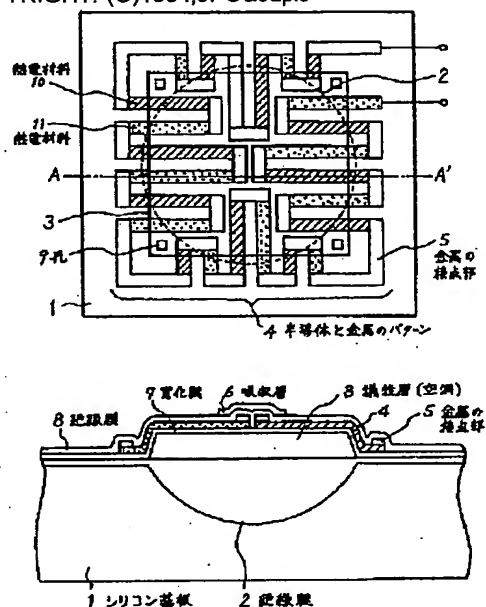
G01J 1/02**G01J 5/02****H01L 35/32**(21) Application number: **04265688**(71) Applicant: **NEC CORP**(22) Date of filing: **05.10.92**(72) Inventor: **UCHIDA MAKOTO**(54) **INFRARED SENSOR**

(57) Abstract:

PURPOSE: To enhance sensitivity, in a thermal infrared sensor having a diaphragm structure, by forming a semispherical cavity to a silicon substrate directly under a membrane.

CONSTITUTION: An infrared sensor consists of a silicon substrate 1, a pattern of a semiconductor and a metal, a silicon nitride membrane 7, an absorbing layer 6 high in infrared absorbancy and an insulating film 8. The pattern 4 constitutes a thermopile wherein two kinds of thermoelectric materials 10, 11 different in thermoelectric power are alternately connected through metal contact parts 5. A cavity 3 is formed by infiltrating an etching soln. into the silicon substrate from holes to etch the substrate and the nitride film 7 becomes a stopper against etching. Since there is a semispherical cavity in the substrate 1 and a membrane having a refractive index larger than that of silicon is provided to flatten the cavity, infrared rays passing through the membrane are reflected by the interface of the semispherical cavity and incident on the membrane from the rear thereof to be efficiently absorbed.

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Solution ? wet?